Optimization of PSII particle preparation from *Arabidopsis thaliana* using different detergents ratio of TX-100

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PSII particle (BBY, Berthold, Babcock, and Yocum, the three scientists who developed the method in 1981) preparation worked robustly using commercially available spinach leaves. We have evaluated the protocol using research model plant *Arabidopsis thaliana*. Five Triton X-100/chlorophyll ratios (22.5, 20, 17.5, 15, 12.5) were used to isolate BBY from relatively low light grown plants. The total PSII (chlorophyll) yield, photochemistry monitored using Q^{A-} reoxidation in the absence and presence of DCMU and fast fluorescence induction were measured using UV-Vis spectrophotometry, chlorophyll fluorometer respectively. 77K fluorescence spectrophotometry was used to monitor the contamination of Photosystem I (PSI) peaking around 725 nm. We found that decreased TX-100/chlorophyll ratio treatment of the thylakoids didn't produce significantly high yield of PSII. However, PSI contamination in our PSII samples became serious if the TX-100/chlorophyll ration decreased below 15. Thylakoids treated with 0.25% β-DDM didn't produce any significant PSII preparation. We also used SDS-PAGE gel to evaluate the protein profile in each sample. Spinach BBY was used as a control throughout the whole experiment. We will next to evaluate the excitation energy transfer using ultrafast laser spectroscopy.